Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 15 of the	)	RM No. 9022
Commission's Rules to Improve the	)	
Image Frequency Characteristics	)	
of Scanning Receivers in the Bands	)	
Associated with the Domestic Public	)	
Cellular Radio Telecommunications	)	
Service under Part 22	)	

COMMENTS ON PETITION FOR RULEMAKING

INTRODUCTION

On February 3, 1997, Uniden America Corporation ("Uniden") filed its Petition with the Federal Communications Commission ("Commission") to amend Part 15 of the Rules by adding a requirement that scanning receivers ("scanners") manufactured or imported into the United States have a minimum -38 decibel ("dB") image rejection ratio specification for those frequencies assigned to the Cellular Radiotelephone Service ("Cellular Band") under Part 22 of the Commission's Rules. Uniden hereby comments on its Petition pursuant to the Commission's Public Notice of February 7, 1997. By these comments, Uniden reaffirms its belief in and commitment to the -38 dB rejection ratio specification and offers additional proposals which it believes to be useful in protecting the privacy of cellular telephone conversations. Specifically, Uniden proposes that a hardening agent, such as colored reinforced epoxy[1] be applied to the printed circuit boards ("PCBs") of certain scanners thereby defeating any possible illegal modifications. For, some

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[1] An epoxy reinforced to the point where it cannot easily be removed without rendering the PCB inoperable.

scanners, which cannot be readily altered to receive Cellular Bands or their image frequencies, hardening should not be required.

BACKGROUND

In its Petition for Rulemaking, Uniden provided a description of the benefits afforded to users of scanning receivers. It has also expressed concern over their abuse by certain parties in violation of the Electronic Communications Privacy Act. Those abuses have allowed some scanner users to invade the privacy of cellular telephone conversations. They include the intentional or accidental listening to cellular telephone "image frequencies".

Uniden has learned that some users are illegally, and in some cases innocently, monitoring the image frequencies of the prohibited Cellular Bands, which images are themselves outside the frequency bands allocated to the Cellular Radiotelephone Service in Part 22. These detected image frequencies represent the undesired reception of a signal to which a radio receiver is not tuned. This is a natural occurrence in superheterodyne receivers. Many of the images, in fact, are the primary fundamental frequencies of other legitimate, licensed FCC services. Nevertheless, either by serendipitously happening upon an image frequency of the cellular service, or by intentionally analyzing the circuitry and characteristics of a particular scanning receiver to determine where Cellular Band image frequencies may occur, some scanner users have been able to identify image frequency locations and eavesdrop on cellular telephone conversations.

To defeat such activity, Uniden began building scanning receivers with special filters which were designed to enhance the image rejection characteristics of the radio receiver. Uniden wishes to clarify that all of its scanners are manufactured in compliance with the design mandates

of Section 15.121 of the Commission's Rules and have been properly certified by the FCC. They are made with the intent to make any modification enabling them to intercept cellular conversations extremely difficult. It bears emphasis that these receivers are only made modifiable after someone invests the time (sometimes hundreds of hours) and talent necessary to figure out how to make their modification easy. Thereafter, of course, anyone who follows their instruction can make the modification. Unfortunately, as was demonstrated by Congressman Billy Tauzin in hearings before the Subcommittee on Telecommunications, Trade and Consumer Protection on Wednesday, February 5, 1997, there are persons who have figured a way to defeat the protective circuitry of the scanning radio, some of whom have indeed published instructions for others on how to perform these alterations. Therefore, Uniden is convinced that the Commission must also promulgate a rule which will specify a prophylactic measure capable of defeating such alterations by tampering.

DISCUSSION

After considerable study within Uniden and following discussions with others in the scanning receiver community, Uniden remains convinced that a minimum -38 dB image rejection ratio specification will render the cellular telephone image frequencies of any particular scanning receiver useless for the purpose of intercepting and eavesdropping upon cellular telephone conversations. Uniden remains equally convinced that the industry will be able to implement the manufacturing changes required for such a standard within a time period of ninety (90) days after the effective date of the rule change.

In addition, Uniden has come to realize that most modifications to the circuitry and software programming of scanner receivers made to prevent cellular telephone eavesdropping can be defeated given sufficient time and dedication to the task by a person with improper motives who is knowledgeable in sophisticated electronics design. Thus, Uniden believes that an additional long term solution is required. Uniden, therefore, proposes that the solution to this concern is to require all manufacturers of scanning radio receivers which could possibly be modified to intercept cellular conversations to harden the PCBs with some method that will prevent the circuitry from being visible and will render the circuit board inoperative when tampered with. Currently, we recommend a colored reinforced epoxy. This epoxy will address the issue in several ways. First, one will not be able to study the circuitry to determine how and where to modify it since it cannot be seen. Second, one will not be able to modify the circuitry since it is not available for tampering without removing the epoxy from the boards. Finally, the reinforced epoxy compound, or such other method as may be proposed by a manufacturer, must have such adhesive characteristics that any attempt to remove it would render the circuit board inoperative.

By this two-pronged approach, Uniden has addressed the three principal concerns of cellular telephone eavesdropping. Image frequencies, illegal modifications to scanning radio receivers and a valid and reliable circuit hardening methodology. Moreover, to protect the circuitry from casual study by unauthorized persons, Uniden also requests that the Commission modify its rules to specify that all applications for equipment authorization to certify scanning radio receivers automatically be afforded confidentiality protection, without special request or additional Commission filing fee. By doing this, individuals will be impeded from obtaining technical details contained in equipment authorization applications by making them unavailable for

copying at the FCC's Public Reference Rooms. For the Commission to allow that activity would be tantamount to the Commission being made an accomplice to those who would obtain and utilize this circuit information for illegal purposes. Surely the Commission would wish to avoid that possibility.

CONCLUSION

Were the rules proposed herein adopted by the Commission, Uniden is convinced that the technical standards thereby created could be met by all manufacturers within ninety (90) days of the effective date of the Commission's order. How the manufacturer seeks to comply with those technical standards should be left to the manufacturer. Whether they provide filters, modify the frequency inventories of the unit's receiver CPU or abandon double conversion technology or a combination of these or other techniques: that decision should be left to the manufacturer. Rather, Uniden herein proposes a performance specification which the manufacturer must demonstrate can be met by its unit. Similarly, if a better or more attractive method than reinforced epoxy becomes available for hardening the circuitry, the manufacturer should be able to demonstrate that such new method performs the same task of disabling the circuit board when being tampered.

Uniden is pleased to have initiated this proceeding designed to enhance and ensure the privacy rights of cellular telephone users. We look forward to adoption of the rules it has proposed herein.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Tracey S. Westbrook, a secretary in the law firm of Pepper & Corazzini, L.L.P., do hereby certify that a true copy of the foregoing "Comments on Petition Rulemaking" was sent this 10th day of March, 1997 by hand delivery, to the following:

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